MIG-V16

User Manual V1.0

⚠ Before using the product, please read this manual and keep it for future reference.

MAGNIMAGE

MIG-V16

Statement

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Revision History

Version	Revise Date	Revised Content
V1.0	2023-11-15	First release

Directory

Introduction

Thanks for your purchasing our MIG-V16 switcher. Do hope you can enjoy the experience of the product performance. The design of the switcher conforms to international and industry standards. But if with improper operation, there will be a personal injury and property damage. In order to avoid the dangerous, please   obey the relevant instructions when you install and operate the product.

Trademark Credit

- VGA and XGA are the trademarks of IBM.
- VESA is a Video Electronics Standards Association's trademark.
- HDMI, HDMI logo, and High Definition Multimedia Interface Body digital interfaces are trademarks or registered trademarks of HDMI Licensing LLC.
- Even if the company or product trademark is not specifically stated, the trademark has been fully recognized.

About the Software

Any acts such as change, decompile, disassemble, decrypt or reverse engineer the software installed in the product are illegal.

Product Features

- 16×4K main output, 2×4K AUX output
- 1 Multi-window pre monitoring, with customized pre monitoring interface support
- 1 HDMI output for real-time console echo
- 24 Mixed matrix input, with multiple 4K and 2K input boards to choose from
- Support 10G OPT output
- Support 4K×2K/60Hz 4:4:4 input
- Supports to 32 layers for one screen，up to 48 layers for whole machine
- Support 8 peer-to-peer background maps
- Support HDCP1.4&2.2
- Support for outputting custom resolutions
- Support input signal EDID management
- Support image crop and layer Zoom
- Support color keys and brightness color selection
- Support layer feathering function
- Support layer borders, brightness, contrast, and color temperature adjust
- Support edge fusion, suitable for projection stitching
- Support external synchronization and multi machine cascading splicing
- Support dual power redundant backup
- Support AUX output of PGM or PVW images
- Support the use of MIG-H9 video control console to control the video switching console MIG-V16 on/off
- Can be used with MIG-H9 video control console or PC upper computer software control

Safety Notice

- The input voltage range of the power supply of this product is 100~240V, 50/60Hz, please use the correct power supply.
- When you want to connect or unplug any signal cable or control cable, please make sure that all power cables have been unplugged beforehand.
- When you want to add hardware devices to this product or remove hardware devices from this product, please make sure that all signal cables and power cables have been unplugged in advance.
- Before performing any hardware operations, power off the MIG-V16 and discharge static electricity from your body by touching a grounded surface.
- Please use it in a clean, dry and ventilated environment, and do not use this product in a high temperature, humid environment.
- This product is an electronic product, please keep it away from fire, water and flammable and explosive dangerous goods.
- There are high-voltage components in this product, please do not open the case or repair the device by yourself.
- If you find any abnormality such as smoke or odor, please Function off the power switch immediately and contact the dealer.

Function Introduction

Overview

MIG-V16 　is the latest Magnimage high-performance video switcher.It adopts a hardware architecture based on a large capacity high-speed FPGA and high-speed digital bus matrix, and internally uses RBG 24bits/60Hz processing; At the same time, it is equipped with a high-performance scaling engine that supports seamless splicing of multi-screen output, with clear output images, high color reproduction, distinct levels, smoothness, and no delay. Adopting mixed matrix input, multiple 4K and 2K input modules for customized selection, supporting 4K×2K/60Hz 4:4:4 input/output, real-time pre monitoring of input and output images.

The MIG-V16 video switching station supports multiple signal source inputs: DVI, HDMI, 3G-SDI, 12G-SDI, DP1.2, HDMI2.0, supporting 4K × 2K/60Hz input, capable of EDID management of input signals; It can be expanded to up to 4 input cards and can achieve synchronous locking of input signals, ensuring synchronous output of signals;

In conjunction with the MIG-H9 video console, a single MIG-H9 video console can control multiple MIG-V16 video switching stations. It can achieve functions such as fading in and out switching between multiple layers, multi screen and multi scene switching, and is widely used in automotive exhibitions, commerce, conferences, product launches, stage performances, and other occasions.

Technical Specifications

Input Information

Input Board Type	Port	Quantity Of	Resolution Specification
4DP+4HDMI	DP1.2/HDMI2.0	4+4	3840×2160/60Hz、7680×1080/60Hz and customized
2DP/2HDMI+2SDI	DP1.2/HDMI2.0 +12G SDI	2+2+2	3840×2160/60Hz、7680×1080/60Hz and customized/4K SDI backward compatibility
4SDI	12G SDI	4	3840×2160/60Hz backward compatibility
4HDMI	HDMI1.3	4	EIA/CEA-86standard，Complies with HDMI-1.3 standard
4DVI	DVI-D	4	VESA 1920×1080/60Hz and customized

Output Information

Board Type	Interface Type	Port	Quantity Of	Resolution Specification
Main Output Board	HDMI	HDMI 2.0	4	VESA 3840×2160/60Hz、3840×2160/50Hz and customized； **Normal output board:** maximum output limit of 4096 pixels, maximum: 2176 pixels **Feathering output board:** maximum output limit: 7680 pixels, maximum: 3500 pixels
	HDMI +OPT	HDMI2.0 +10G Fiber Optic	4+8	
Aux Output Board	AUX OUTPUT	HDMI 2.0	2	VESA 3840×2160/60Hz、3840×2160/50Hz and customized； Maximum output limit: 4096 pixels, maximum limit: 2176 pixels
	Echo output	HDMI1.3	1	1920×1080/60Hz
	Multiple pre monitoring output	HDMI1.3	1	1920×1080/60Hz

| Machine Specification	
Input Voltage	100～240V AC，50/60Hz
Power Consumption	600W
Dimensions	482.6×459×354.9mm　　(L×W×H)
Net Weight	About 32.6KG
Operating Temperature	0-45℃

Introduction to front and rear panels

Front Panel
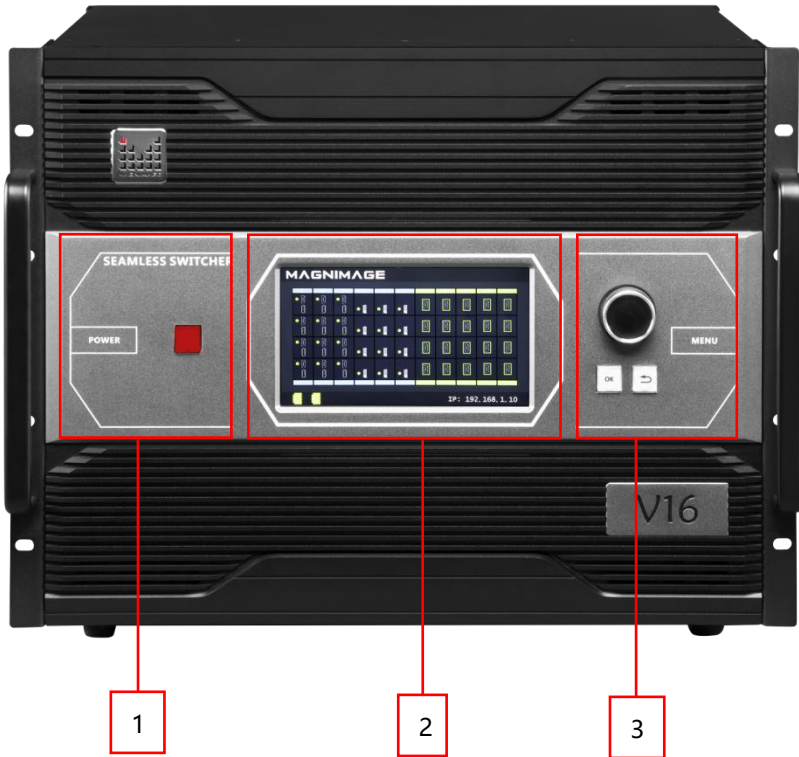
1. POWER：Power standby button；
2. Touch Screen： Display the current working status of the machine, and browse input information, firmware version, etc；
3. MENU： Can browse or set menu content, including confirmation keys, return keys, and shortcut knobs；

Back Panel
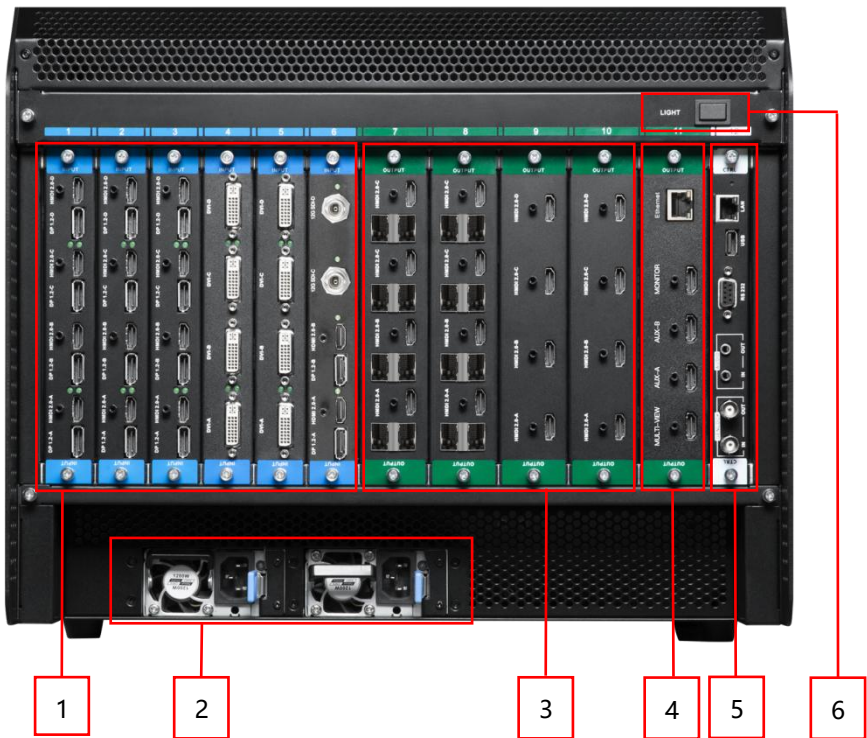
1.   Input area, 6 input boards, including 2K and 4K input boards;

2.   Redundant power input port;

3.   Output area, depending on board type, with a maximum of 16 HDMI2.0+16 sets of OPT port outputs;

4.   MULTI-VIEW (multi pre monitoring window port); MIONITOR (HDMI echo port); Two AUX output ports; Enternet (function not released);

5.   GENLOCK IN&OUT (Genlock input/output port); AUDIO IN&OUT (audio input and output port); RS232 serial port; USB port (for host upgrade); LAN control port (used to connect to the MIG-H9 console or PC upper computer);

6.   Rear panel lighting switch;

MIG-V16 Board Introduction

The MIG-V16 video switching station has abundant board resources to choose from. The control board card is a standard resource and is the core component of the entire device; The output board is a standard resource, while the input board is an optional resource that can be matched according to actual needs.

In addition, there are a total of four output types for the output board, namely: main output, AUX auxiliary output, multi pre monitoring output, and console echo output.
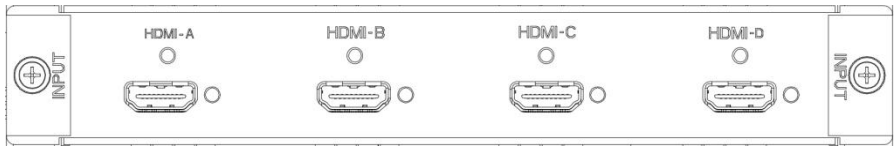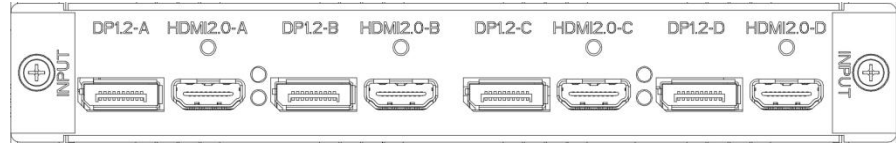
Control Card：

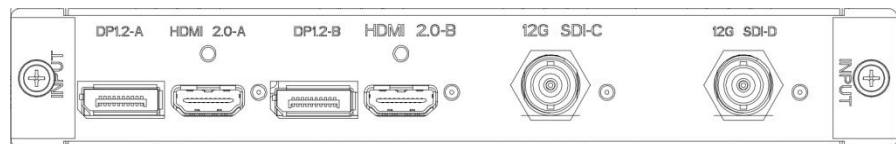| MIG-V16-Control	
GENLOCK IN&OUT	Genlock input/output port
AUDIO IN&OUT	3.5mm Audio input and output
RS232	Control interface, function not yet open
USB	USB interface for hardware program upgrades
LAN	Network control interface for connecting to MIG-H9 video control console or PC upper computer

Input Board：

MIG-V16-INDVI	
Signal Specifications	DVI-D digital signal supporting VESA standard,

	1920×1080@60Hz , supports EDID management
Interface Description	24+5 pin/female interface

MIG-V16-INHDMI

Signal Specifications	EIA/CEA-86 standard, HDMI1.3 standard, 1920×1080@60Hz
Interface Description	HDMI TYPE-A

MIG-V16-INHDMI DP（DP1.2×4，HDMI2.0×4 输入卡）

Signal Specifications	DP1.2/HDMI2.0 standard, supports 3840 × 2160@60Hz , supports EDID management
Interface Description	FULL SIZE 20 pin and HDMI TYPE-A

MIG-V16-INHDMI DP SDI（DP1.2×2，HDMI2.0×2，12G-SDI×2 input card）

Signal Specifications	DP1.2/HDMI2.0standard,supports3840×2160@60Hz , supports EDID management Compatibility below 12G-SDI;
Interface Description	FULL SIZE 20 PIN、HDMI TYPE-A and BNC /female interfaces

MIG-V16-IN SDI (12G-SDI×4 input card)

Signal Specifications	12G-SDI,support 3840×2160@60Hz downward compatibility;
Interface Description	BNC/female interfaces

Output Board:

MIG-V16-OUTHDMI

Signal Specifications	HDMI2.0 standard, support 3840 × 2160@60Hz , supports custom output resolution

MIG-V16-OUTHDMIOPT

Signal Specifications	HDMI2.0 standard, support 3840 × 2160@60Hz, support custom output resolution
	10G OPT , support 3840 × 2160@60Hz, support custom output resolution

MIG-V16-OUTAUX

| Signal Specifications	MULT-VIEW	Multiple pre monitoring output ports，1920×1080@60Hz
	AUX	Aux output port, supporting 3840×2160@60Hz , supports custom output resolution
	MONITOR	Video switching station echo port, 1920×1080@60Hz
	Enthernet	Function not yet open

Use Menu

The menu system of the product allows for convenient and intuitive setting of the MIG-V16 video switching station to meet user requirements. The MIG-V16 video switching station adopts a high contrast and touch capable LCD screen to display the entire user menu. In the case of no user operation or operation timeout, the LCD screen will display a non menu status. If the buttons on the front panel of the machine are used to set up the machine, the LCD screen will display corresponding menus according to the user's operation, to prompt the user to operate better, faster, and more intuitively.

The following will introduce the menu system of the MIG-V16 video switching station in detail, combining button functions and LCD screen display.

Introduction to Default State

After turning on the power of the MIG-V16 video switching station, during the system boot process, the boot interface will be displayed on the LCD screen of the front panel. After the startup is completed, the default state of the current machine will be displayed on the screen, as shown in the figure below:

Default state interface after startup:
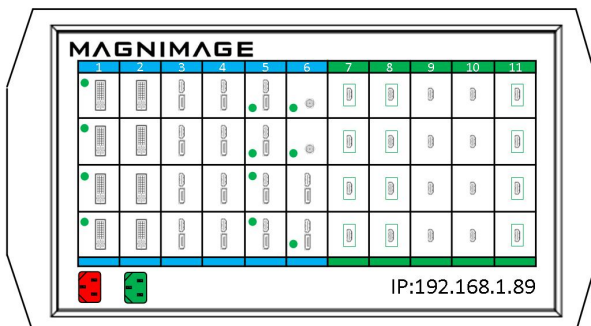
Input/Output Board Card	Board section, blue 1-6 card slots represent input boards, green 7-11 card slots represent output boards
Input Signal Connection	If the input signal connection is valid, a green dot appears on the left side of the port
Output Port Connection	If the signal line of the output port is connected effectively, a green bar appears above the port
Redundant Power Supply	If a valid power cord is connected and the power supply is normal, the power icon will display green, and if the power cord is not connected or not powered, it will display red
IP Address	Display the current IP address of the MIG-V16 video switching station

Main Menu

In a non menu state, press the "OK" button, and the menu system will enter the main menu state. The LCD screen will display as shown in the following figure：

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STATUS

COMM.

FACTORY RESET

LANGUAGE
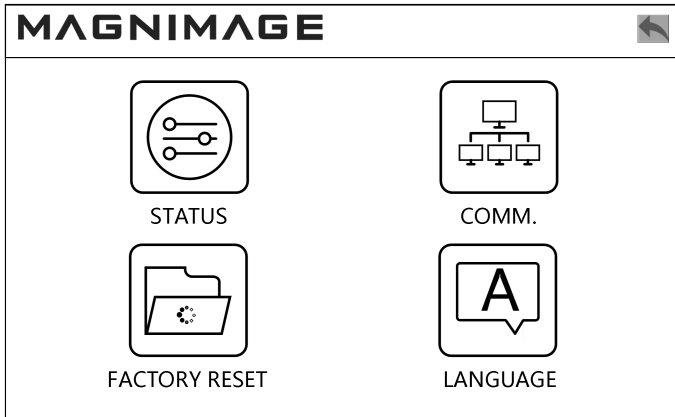
There is a total of 1 menu item in the main menu. Use touch or knob to select the 4 menu titles listed above. After selection, press the "OK" key to enter the selected item, and press the "⤺" key to return to the previous menu level.

State Information：

Fermware Version

No.	Board Slot	Type	Version
1	1	Input	F3014 CF202
2	2	Input	F3014 CF202
3	3	Input	F1037 CF007
4	4	Input	F1037 CF007
5	5	Input	F1037 CF007
6	6	Input	F2020 CF103
7	7	Output	F0758-0758 CE008
8	8	Output	F0758-0758 CE008
9	9	Output	F0758-0758 CE008
10	10	Output	F0758-0758 CE008
11	11	Mv-Aux	F0319-0000 CD004
12	12	Matrix	F0904-0807 CA016-B008
ARM	Key Board:0023		Control Board:8006

| State Information	Display the card insertion status of each input card slot and the program for input/output and control board cards

Communication Setting：

Communication		⤺
IP Address	192.168. 1. 10	Etid
Gateway	192.168. 1. 1	Etid
MAC	E2-EF-73-C6-CC-E2	
		Reset
		Apply

Communication Setting	IP Address	The machine IP defaults to 192.168.1.10, and the knob can be customized and modified according to user needs
	Gateway	The default gateway of the machine is 192.168.1.1, and the knob can be customized and modified according to user needs
	MAC Address	MIG-V16 video switching station MAC address
	Edit	Editing IP addresses and gateways requires knob coordination
	Reset	Restore network settings to default state
	Application	Apply the modification of current user defined communication settings parameters

Factory Reset：

Factory Reset

Cancel	Continue
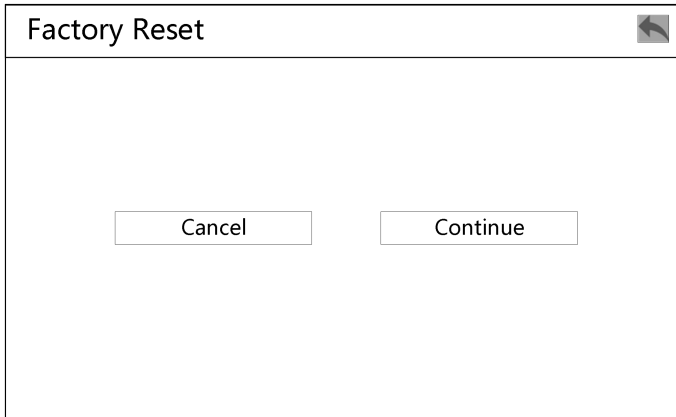
Factory Reset	Restore the machine to its factory default settings

LANGUAGE：

Language/语言

English ▶

中文简体 ▶

繁體中文 ▶

English	Set the display language of the menu system to English
Simplified Chinese	Set the display language of the menu system to Simplified Chinese
Traditional Chinese	Set the display language of the menu system to Traditional Chinese

Warranty

Machine Warranty Period

- 24 months from the date of the user's purchase invoice；
- If the user's purchase invoice is lost, the 60th day after the production date of this product is the start date of the warranty for this product.

Non Warranty

- Faults or damages caused by abnormal use reasons such as stains or surface scratches caused by machine immersion, collision, or use;
- Dismantling or modification without our company's consent;
- Failure or damage caused by use in a working environment other than that specified by the product (such as excessive temperature, low temperature, or unstable voltage);
- Faults or damages caused by force majeure (such as fires, earthquakes, etc.) or natural disasters (such as lightning strikes, etc.);
- The product has exceeded the warranty period.